

Table 1

The Evaluation of the Methods for Manufacturing the Proteoses (1)

Embodiment No.	Animal Protein Sample Weight	Plants Sample Weight	pH Value	Hydrolysis Conditions	Status of Hydrolysis
No. 1-1	Fish meat protein 10 g	Mitake mushrooms 10 g	Chemicals A pH 7.2	4 °C, for 1 hour	The MHCs are completely decomposed. The bands of the myosin disappeared.
No. 1-2	↑	↑	↑	4 °C, for 3 hours	↑
No. 1-3	↑	↑	↑	4 °C, for 12 hours	↑
No. 1-4	↑	↑	↑	4 °C, for 48 hours	↑
Example No. 1	Fish meat protein 10 g	None	Chemicals A pH 7.2	4 °C, for 48 hours	The MHCs are not decomposed. The bands of the myosin still remain.
No. 2-1	Fish meat protein 10 g	Kiwi fruit pulps 10 g	Chemicals A pH 7.2	4 °C, for 1 hour	The MHCs are completely decomposed. The bands of the myosin disappeared.
No. 2-2	↑	↑	↑	4 °C, for 3 hours	↑
No. 2-3	↑	↑	↑	4 °C, for 12 hours	↑
No. 2-4	↑	↑	↑	4 °C, for 48 hours	↑
Example No. 2	Fish meat protein 10 g	None	Chemicals A pH 7.2	4 °C, for 48 hours	The MHCs are not decomposed. The bands of the myosin still remain.
No. 3-1	Fish meat protein 10 g	Pineapple pulps 10 g	Chemicals A pH 8	4 °C, for 1 hour	The MHCs are completely decomposed. The bands of the myosin disappeared.
No. 3-2	↑	↑	↑	4 °C, for 3 hours	↑
No. 3-3	↑	↑	↑	4 °C, for 12 hours	↑
No. 3-4	↑	↑	↑	4 °C, for 48 hours	↑
Example No. 3	Fish meat protein 10 g	None	Chemicals A pH 8	4 °C, for 48 hours	The MHCs are not decomposed. The bands of the myosin still remain.

Table 2

The Evaluation of the Methods for Manufacturing the Proteoses (2)

Embodiment No.	Animal Protein Sample Weight	Plants Sample Weight	pH Value	Hydrolysis Conditions	Status of Hydrolysis
No. 4-1	Fish meat protein 10 g	Papaya pulps 10 g	Chemicals A pH 7.2	4 °C, for 1 hour	The MHCs are completely decomposed. The bands of the myosin disappeared.
No. 4-2	↑	↑	↑	4 °C, for 3 hours	↑
No. 4-3	↑	↑	↑	4 °C, for 12 hours	↑
No. 4-4	↑	↑	↑	4 °C, for 48 hours	↑
Example No. 4	Fish meat protein 10 g	None	Chemicals A pH 7.2	4 °C, for 48 hours	The MHCs are not decomposed. The bands of the myosin still remain.
No. 5-1	Fish meat protein 10 g	Papaya peels 10 g	Chemicals A pH 7.2	4 °C, for 1 hour	The MHCs are completely decomposed. The bands of the myosin disappeared.
No. 5-2	↑	↑	↑	4 °C, for 3 hours	↑
No. 5-3	↑	↑	↑	4 °C, for 12 hours	↑
No. 5-4	↑	↑	↑	4 °C, for 48 hours	↑
Example No. 5	Fish meat protein 10 g	None	Chemicals A pH 7.2	4 °C, for 48 hours	The MHCs are not decomposed. The bands of the myosin still remain.

Table 3

The Evaluation of the Methods for Manufacturing the Proteoses (3)

Embodiment No.	Animal Protein Sample Weight	Plants Sample Weight	pH Value	Hydrolysis Conditions	Status of Hydrolysis
No. 6	Frozen fish meat paste 97 g	Papaya peels 3 g	No control	After vacuum packing 70 °C, for 10 minutes	A protease is produced which does not form a gel. The protein concentration of the protease is 165 mg/ml, the same as that of the frozen fish meat paste.
No. 7	↑	Green papaya peels 3 g	↑	After vacuum packing 70 °C, for 10 minutes	↑
No. 8	↑	Mitake mushroom caps 3 g	↑	After vacuum packing 60 °C, for 10 minutes	↑
No. 9	↑	Mitake mushroom stalks 3 g	↑	After vacuum packing 60 °C, for 10 minutes	↑
No. 10	Frozen fish meat paste 94 g with salt 3 g	Papaya peels 3 g	↑	After vacuum packing 70 °C, for 10 minutes	A protease is produced which does not form a gel. However, the activity of the endopeptidase is slightly reduced.
No. 11	↑	Mitake mushrooms 3 g	↑	After vacuum packing 70 °C, for 10 minutes	↑

Table 4

The Evaluation of the Methods for Manufacturing the Proteoses (4)

Embodiment No.	Animal Protein Sample Weight	Plants Sample Weight	pH Value	Hydrolysis Conditions	Status of Hydrolysis
No. 12	Frozen fish meat paste 97 g Preheated up to 85 °C, for 30 min.	Papaya peels 3 g	No Control	After vacuum packing 70 °C, for 10 minutes	A protease is produced which does not form a gel.
No. 13	↑	Mitake mushroom caps 3 g	↑	After vacuum packing 60 °C, for 10 minutes	↑
No. 14	↑	Mitake mushroom stalks 3 g	↑	After vacuum packing 60 °C, for 10 minutes	↑
No. 15	Ground leg meat of chicken 97 g	Papaya peels 3 g	↑	After vacuum packing 70 °C, for 10 minutes	A protease is produced which does not form a gel. The protein concentration of the protease is 200 mg/ml, the same as that of the ground leg meat of chickens.
No. 16	↑	Mitake mushroom caps 3 g	↑	After vacuum packing 60 °C, for 10 minutes	↑
No. 17	↑	Mitake mushroom stalks 3 g	↑	After vacuum packing 60 °C, for 10 minutes	↑
No. 18	Ground pork 97 g	Papaya peels 3 g	↑	After vacuum packing 70 °C, for 10 minutes	A protease is produced which does not form a gel. The protein concentration of the protease is 180 mg/ml, the same as that of ground pork.
No. 19	↑	Mitake mushroom caps 3 g	↑	After vacuum packing 60 °C, for 10 minutes	↑
No. 20	↑	Mitake mushroom stalks 3 g	↑	After vacuum packing 60 °C, for 10 minutes	↑

Table 5

The Evaluation of the Methods for Manufacturing the Proteoses (5)

Embodiment No.	Animal Protein Sample Weight	Plants Sample Weight	pH Value	Hydrolysis Conditions	Status of Hydrolysis
No. 21	Fish meat protein 0.5 g	Papaya peels 0.25 g	Controlled with Chemicals A and B pH 2,3,4,5,6,7, 8,9,10, and 11	70 °C, for 10 minutes	The MHCs are completely decomposed.
No. 22	↑	Mitake mushrooms 0.25 g	Controlled with Chemicals A and B pH 2,3,4,5,6,7, 8,9,10, and 11	60 °C, for 10 minutes	The MHCs are completely decomposed. The activity of the endopeptidases at the pH value range between 4 and 9 is higher.
No. 23	Frozen fish meat paste 97 g	Papaya peels 3 g	No control	After vacuum packing 0, 10, 20, 30, 40, 50, 60, 70, and 80 °C, for 10 minutes	The protein of the frozen fish meat paste is sufficiently hydrolyzed. The activity of the endopeptidase at 70 °C is the highest.
No. 24	↑	Mitake mushroom stalks 3 g	↑	After vacuum packing 0, 10, 20, 30, 40, 50, 60, 70, and 80 °C, for 10 minutes	The protein of the frozen fish meat paste is sufficiently hydrolyzed. The activity of the endopeptidase at 60 °C is the highest.

Table 6

The Evaluation of the Methods for Manufacturing the Proteoses (6)

Embodiment No.	Animal Protein Sample Weight	Plants Sample Weight	pH Value	Hydrolysis Conditions	Status of Hydrolysis
No. 25	Frozen fish meat paste 97 g	Mitake mushroom stalks 3 g	No control	After vacuum packing 0, 10, 20, 30, 40, 50, 60, 70, and 80 °C, for 10 minutes	The protein of the frozen fish meat paste is sufficiently hydrolyzed. The activity of the endopeptidase at 60 °C is the highest.
No. 26	Frozen fish meat paste 100 g	Papaya peels 2, 5, 10, 20, 30, 40, and 50 g	↑	After vacuum packing 70 °C, for 10 minutes	The protein of the frozen fish meat paste is sufficiently hydrolyzed.
No. 27	Frozen fish meat paste 100 g	Mitake mushroom stalks 2, 5, 10, 20, 30, 40, and 50 g	↑	After vacuum packing 60 °C, for 10 minutes	The protein of the frozen fish meat paste is sufficiently hydrolyzed.

Table 7

Foods Containing the Proteoses

Embodiment No.	Classification	Title	Constituents	Uses
No. A1	Seasoned proteoses	Sesame paste	85 wt. % proteoses of fish meat protein, 7 wt. % sesame paste, and 8 wt. % sugar	Spread-type foods for bread and crackers
No. A2	↑	Chocolate paste	60 wt. % proteoses of fish meat protein, 32 wt. % chocolate, and 8 wt. % sugar	↑
No. A3	↑	Soybean flour paste	50 wt. % proteoses of fish meat protein, 25 wt. % soybean flour, and 25 wt. % sugar	↑
No. A4	Foods having proteoses	Yogurt jelly	14 wt. % proteoses of fish meat protein, 9 wt. % cream cheese, 70 wt. % yogurt, 5 wt. % sugar, 2 wt. % gelatin	Cold confectionery
No. A5	↑	Protein jelly	50 wt. % proteoses of fish meat protein, 1.5 wt. % salt, 48.5 wt. % soup of dried bonito shavings, a bit of agar	Foods for the elderly
No. A6	↑	Truffle chocolate	40 wt. % proteoses of fish meat protein, 60 wt. % chocolate, small amount of wines and spirits	Chocolate-like confectionery
No. A7	↑	Chocolate bar	30 wt. % proteoses of fish meat protein, 70 wt. % chocolate	Chocolate-like confectionery Foods with nutritional supplements
No. A8	↑	Jelly-like drink	5 wt. % proteoses of fish meat protein, 94 wt. % electrolyte drink, a bit of gellant	Lactic acid drinks, fruit drinks, jelly-like drinks
No. A9	↑	Brazil bread	25 wt. % proteoses of fish meat protein, 75 wt. % salt, powdered cheese, egg yolk, milk, salad oil, and rice flour for dumplings. The mixture is baked in an oven.	Bread
No. A10	↑	Fish snack	40 wt. % proteoses of fish meat protein, 60 wt. % salt, wheat flour, tuna oil, and seasoning. The mixture is fried in oil.	Snacks
No. A11	↑	Noodles	33 wt. % proteoses of fish meat protein, 67 wt. % salt, strong flour, and soft flour. The mixture is kneaded and boiled.	Noodles